

Bundled payments improve care for Medicare patients undergoing joint replacement

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Implementing bundled payments for total joint replacements resulted in year-over-year improvements in quality of care and patient outcomes while reducing overall costs, according to a new three-year study from NYU Langone Medical Center.

Specifically, NYU Langone's Department of Orthopaedic Surgery saw reductions in overall length of stay, decreases in admission to follow-up care facilities and lower readmission rates at 30, 60, and 90 day intervals over the three-year study period.

The evidence-based protocols used in the study were developed as part of NYU Langone's participation in the Bundled Payment for Care Improvement (BPCI) pilot initiative sponsored by the Centers for Medicaid & Medicare Services (CMS).

"The study highlights what we've seen firsthand since implementing our bundled payment initiative - that value-based care is best for our patients," says lead study author Richard Iorio, MD, the Dr. William and Susan Jaffe Professor of Orthopaedic Surgery and chief of the Division of Adult Reconstructive Surgery at NYU Langone. "Our Medicare patients are healthier after a joint replacement and less likely to come back to the hospital thanks to the protocols we put in place as part of this program."

The findings were presented March 2 at the American Academy of Orthopaedic Surgeons (AAOS) 2016 Annual Meeting in Orlando Florida.

Total joint replacements in the knee and hip are highly successful, commonly-performed surgeries in the United States. More than 600,000 knee replacements alone are performed in the U.S. each

year, with the numbers expected to rise more than 670 percent by 2030, according to the study's authors.

How Bundled Payment Programs Work

Under Medicare, hospitals and physicians are normally reimbursed in separate payments for surgery, for a hospital stay and for tests that a patient undergoes while at the hospital for hip or knee replacement. Under a bundled payment program, hospitals and physicians, instead, are given a set fee by Medicare for the entire care of a patient. The hospital and its care providers, in turn, must deliver all services within that set fee for a period of 90 days. The medical providers also assume financial responsibility for any complications over the entire episode of care, including post-surgical infections and hospital readmissions.

At the end of each year of the study, CMS tallied up the total cost of the "bundles" and compared those costs with traditional baseline charges. If the total cost for the year is lower than the baseline cost, the hospital and physicians share in the savings.

In order to implement such a program, "key stakeholders and physicians across all areas of NYU Langone had to work together to create new protocols and guidelines to standardize care and ensure all patients have all the necessary resources before a surgery takes place and once at home to ensure the most optimal recovery possible," Dr. Iorio says.

How the Study Was Conducted

In 2011, NYU Langone's Hospital for Joint Diseases was chosen as a BPCI pilot site, focusing on Medicare patients undergoing a total joint

replacement. In the first year, researchers identified 721 Medicare-eligible patients undergoing total joint replacement. For comparative purposes, they identified 785 in the third year. Over the course of three years of study:

- Average hospital length of stay decreased from 3.58 days to 2.96 days;
- Discharges to inpatient rehabilitation or care facilities decreased from 44 percent to 28 percent;
- Average number of readmissions at 30 days decreased from 7 percent to 5 percent; from 11 percent to 6.1 percent at 60 days; and from 13 percent to 7.7 percent at 90 days
- The average cost to CMS of the episode of care decreased from \$34,249 to \$27,541 from year one to year three of the program

The largest CMS cost decrease was achieved by a reduction in inpatient rehabilitation costs per episode of care—from \$6,228 at baseline to \$742 by quarter 3 of 2014. While there was a slight increase in home health care costs from \$3,186 at baseline to \$3,926 quarter 3 of 2014, this was more than offset by the decrease in inpatient rehabilitation admissions.

"Bundled care payment programs benefit everyone - our surgeons, the health care system, and most importantly, our patients," says Joseph Zuckerman, MD, the Walter A. L. Thompson Professor of Orthopaedic Surgery and Chair of Orthopaedic Surgery at NYU Langone. "As we shift towards this quality over quantity-based system of care, providers will adapt and implement protocols to ensure every joint replacement patient is given the same resources to have the most successful outcome."

Future research, Dr. Iorio says, aims to look at how a bundled payment risk factor stratification and modification program to delay surgery in high-risk patients—such as those with conditions including morbid obesity, uncontrolled diabetes, neurocognitive and dependency issues, and cardiovascular and stroke complications—could impact patient outcomes and medical care.

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